Application No.: 10/596,103 Amendment and Response dated November 23, 2009 Reply to Office Action of July 22, 2009 Docket No.: 1848-7 PCT/US/RCE

# **EXHIBIT A**



US007271144B2

# (12) United States Patent

#### Petzelbauer

# (10) Patent No.: US 7,271,144 B2 (45) Date of Patent: Sep. 18, 2007

# (54) THERAPEUTIC FIBRIN-DERIVED PEPTIDES AND USES THEREOF

(75) Inventor: Peter Petzelbauer, Vienna (AT)

(73) Assignee: Fibrex Medical Research & Development GmbH, Vienna (AT)

(\*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35

U.S.C. 154(b) by 0 days.

(21) Appl. No.: 10/459,030

(22) Filed: Jun. 11, 2003

(65) Prior Publication Data

US 2004/0192596 A1 Sep. 30, 2004

# Related U.S. Application Data

(63) Continuation of application No. PCT/AT01/00387, filed on Dec. 7, 2001.

# (30) Foreign Application Priority Data

Dec. 12, 2000 (AT) ...... A 2063/2000

(51) **Int. Cl.**A61K 38/00 (2006.01)

C07K 14/00 (2006.01)

G01N 33/53 (2006.01)

(52) U.S. Cl. ...... 514/2; 530/350; 435/7.1

See application file for complete search history.

# (56) References Cited

#### U.S. PATENT DOCUMENTS

#### FOREIGN PATENT DOCUMENTS

DE 19729591 2/1999 WO WO/1993/21962 11/1993 WO WO/2002/048180 6/2002

# OTHER PUBLICATIONS

Herrick, S. et al. (2002). Role of Plasminogen Activators in Peritoneal Adhesion Formation. Biochem Soc Trans. Apr. 2002; 30(2):126-31.

Everse, S. J. (1999). Conformational Changes in Fragments D and Double-D from Human Fibrin(ogen) Upon Binding the Petide Ligand Gly-His-Arg-Pro-Amide. Biochemistry, Bd, 38, 18, 2941-2946

Kunstfield et al. (1997) HECA-452 T Cells Migrate Through Superficial Vascular Plexus But Not Through Deep Vascular Plexus Endothelium, J Invest Dermatol. Mar. 1997;108(3):343-8. Petzelbauer et al. (1996). Human Delayed-Type Hypersensitivity Reaction in a SCID Mouse Engrafted with Human T-Cells and Autologous Skin, J. Invest. Dermatol., 1996, 107: 576-581.

Kawasaki, K. (1989). Amino Acids and Peptides XII: Synthetic Peptides Related to the N-Terminal Portion of Fibrin Alpha-chain and their Inhibitory Effects on Fibrinogen/Thrombin Clotting. Thrombosis Research, Bd, 56: 757-762.

Skogen, W. F. et al. (1988). Fibrogen-Derived Peptide B 1-42 Is a Multidomained Neutrophil Chemoattractant. Blood 71: 1475-1479. Henschen et al. (1985). High Performance Liquid Chromotography VCH

Engelhart et al. (1984). Surveilance For Nonsocialcomical Infections and Fever of Unknown Origin Among Adult Heotology-Oncology Patients. Infect Control Hosp Epidemiol. May 2002;23(5):244-8.

Ikematsu. (1984). Radioimmunoassay of Fibrinopeptide, Bd. 28, Nr 1, 20-24, Table 2.

Harenberg, J. (1983). Biodistribution of Human Fibrinogen-derived Peptides in Rabbits. Fibrinogen: Struct. Variants Interact., 271-278. Nieuwenhuizen et al. (1983), Biochem Biophys Acta, entitled Plasminogen activation by tissue activator is accelerated in the presence of fibrin(ogen) cyanoger bromide fragment FCB-2, 755: 531-533.

Nuzzo et al. (1981), Thermal Decomposition of Di(cycloalkyl)bi(triethylphosphine)platinum(II) Complexes. J. Amer. Chem. Soc., 37: 3404-3409.

Blomback et al. (1968). N-Terminal Disulphide Knot of Human Fibrinogen. Nature, 218: 130-134.

Merrifield, R. B. (1963). Solid Phase Peptide Synthesis. J. Amer. Chem. Soc., 85: 2149-2154.

\* cited by examiner

Primary Examiner—Robert B. Mondesi (74) Attorney, Agent, or Firm—Baker Botts L.L.P.

# (57) ABSTRACT

The invention relates to peptides having the general formula (I), or a salt or amide thereof, wherein  $R_1$  and  $R_2$  are either the same or different, wherein  $R_1$  and  $R_2$  are each selected from the group consisting of hydrogen and a saturated or unsaturated hydrocarbon residue, said residue having from 1 to 10 carbon atoms, wherein  $Z_1$  is selected from the group consisting of histidine and proline, wherein  $Z_2$  is selected from the group consisting of an arginine and a peptide comprising an initial arginine and having from 2 to 30 amino acids. The invention also relates to methods using the peptides of the present invention in the treatment of inflammation

#### 4 Claims, No Drawings

# THERAPEUTIC FIBRIN-DERIVED PEPTIDES AND USES THEREOF

#### CROSS REFERENCE TO RELATED APPLICATION(S)

The present application is a continuation of International Patent Application No. PCT/AT01/00387, filed Dec. 7, 2001, published in German on Jun. 20, 2002 as International Patent Publication No. WO02/248180, which claims priority 10 to Austrian Application No. AT A 2063/2000, filed Dec. 12, 2000, all of which are incorporated in their entireties herein.

The invention concerns peptides and/or proteins, their use for preparing a therapeutic and/or preventive pharmaceutical composition as well as a pharmaceutical composition.

Substances for the inhibition or prevention of inflammatory reactions, so-called immunosuppressants, which so far have been used for prophylaxis and therapy, generally comprise two distinct groups. Firstly, derivatives of a horsecondly, exogenous immunosuppressants cyclosporin and its derivatives, azathioprine, cyclophosphamide etc. All those substances possess anti-inflammatory effects but they show substantial side reactions in long-term therapy. Those side reactions have a limiting effect on 25 long-term therapy, which is why those substances are used alternately or in combination in order to keep side effects on a tolerable level or in order to be able to actually proceed with the therapy. As examples of side reactions, the pathological fractures associated with cortison are to be men- 30 tioned, which fractures are caused by the osteoporotic effect of the cortisone, or the renal failure which may be caused by cyclosporin. Those side reactions are inevitable with both groups of compounds, and hence it is merely a question of the duration of the therapy and of the total dose at what point 35 the therapy must be stopped.

The present invention has as its object to provide new pharmaceutical products which are suitable for preventing or inhibiting inflammatory effects and which only show minor side effects. A further object consists in providing long-term 40 therapy.

In the following, the amino acids of the peptides according to the invention are referred to by the usual abbreviations, which denote the  $\alpha$ -amino acids.

By "analogues", a peptide is understood which, by deri- 45 vatisation, substitution, preferably homologous substitution, deletion and/or insertion, is derived from the sequence of the fibrin and in particular from the preferred sequences.

The peptides or protein according to the invention exhibit the general formula I

$$\begin{array}{c|c} R_1 & H & O \\ N - C & \parallel & \parallel \\ N - C - C - Z_1 - Z_2 \end{array}$$

wherein R<sub>1</sub> and R<sub>2</sub>, being equal or different, denote hydrogen, a saturated or unsaturated hydrocarbon residue com- 60 prising from 1 to 3, in particular up to 10, carbon atoms,

Z<sub>1</sub> denotes a histidine or proline residue,

Z<sub>2</sub> denotes an arginine residue, a peptide residue or a protein residue

comprising an initial arginine residue, in particular comprising from 2 to 30 amino acids, as well as the salts thereof, 2

and, f.i., also amides, or mixtures with each other and/or with at least one further substance for therapeutic and/or preventive use in human and/or veterinary medicine, whereby in particular only L-amino acids are provided. Sequences of formula I are listed in Table 1.

It was completely surprising that the specified amino acid sequence prevents the adhesion of cells from the bloodstream to endothelial cells of the vascular wall and/or their subsequent transmigration from the blood into the tissue.

The peptides or protein according to the invention exhibit the general formula II

$$\begin{array}{c|c}
R_1 & H & O \\
N & C & C \\
R_2 & H & C
\end{array}$$

mone, i.e. cortisone, naturally occurring in the body, and 20 wherein R<sub>1</sub> and R<sub>2</sub>, being equal or different, denote hydrogen, a saturated or unsaturated hydrocarbon residue comprising from 1 to 3, in particular up to 10, carbon atoms,

 $Z_1$  denotes a histidine or proline residue,

Arg denotes an arginine,

Z<sub>3</sub> denotes a proline or valine residue,

Z<sub>4</sub> denotes a leucine or valine residue,

Z<sub>5</sub> denotes a protein residue or a peptide residue, in particular comprising

from 2 to 30 amino acids, or an alcohol comprising from 1 to 3, in particular up to 10, carbon atoms, or an organic or inorganic base residue,

as well as the salts thereof, and, f.i., also amides, or mixtures with each other and/or with at least one further substance for therapeutic and/or preventive use in human and/or veterinary medicine, whereby in particular only L-amino acids are provided. Sequences of formula II are listed in Table 2.

It was completely surprising that parts of the sequence, peptides or fragments of the fibrinogen exhibit anti-inflammatory effects. Without being bound by such theoretical considerations, said effects might be based on the fact that the fibrin binds to endothelial cells via its neo-N-terminus of the Bbeta-chain and to cells in the bloodstream via the sequence of the Aalpha-chain, thereby leading to the adhesion and transmigration of cells into the tissue. Those bindings exhibit a side reaction in that the formation of fibrin is inhibited. However, said inhibition does not constitute a potential disadvantage to the patient since the blood coagulation is sufficient also in the absence of fibrin if slight injuries occur. Only in case of surgical treatment, it might optionally be suitable to stop such kind of therapy. Other side reactions may substantially be ruled out, since those substances only interact with natural ligands. Furthermore, the natural defence is not affected adversely by the leukocytes in the blood. Thus, the composition of the same, such as granulocytes, lymphocytes and monocytes, remains unaffected so that the natural defence process is maintained and the defence against infections in the blood remains unchanged.

Fibrinogen is produced in the liver and, in this form, is biologically inactive and normally is provided in the blood at concentrations of around 3 g/l. By proteolytic cleavage of the proenzyme prothrombin, thrombin is formed which cleaves off the fibrinopeptides A and B from the fibrinogen. In doing so, fibringen is transformed into its biologically active form. Fibrin and fibrin cleavage products are gener-

Thrombin is formed during each activation of the blood coagulation, i.e. with each damage to the tissue, be it of inflammatory, traumatic or degenerative genesis. The formation of fibrin as mediated by thrombin is basically a protective process with the purpose of quickly sealing any defects caused to the vascular system. However, the formation of fibrin is also a pathogenic process. The appearance of a fibrin thrombus as the triggering cause of cardiac infarction is one of the most prominent problems in human medicine.

The role which fibrin plays during the extravastation of inflammatory cells from the bloodstream into the tissue, which, on the one hand, is a desired process of the defence against pathogenic microorganisms or tumour cells occurring in the tissue, but, on the other hand, is a process which, by itself, induces or prolongues damage done to the tissue, has so far not been examined at all or not to a sufficient extent. Fibrin binds to endothelial cells via its neo-N-terminus of Bbeta by means of the sequence to Bbeta and to cells in the bloodstream by means of the sequence Aalpha, 20 thereby leading to the adhesion and transmigration of cells into the tissue.

The peptides or proteins according to the invention may prevent the adhesion of cells from the bloodstream to endothelial cells of the vascular wall and/or their subsequent <sup>25</sup> transmigration from the blood into the tissue.

A peptide or protein according to the invention of the general formula II, wherein  $Z_5$  denotes a peptide residue comprising the following amino acid sequence (SEQ ID NO: 291):

Asp Lys Lys Arg Glu Glu Ala Pro Ser Leu Arg Pro

Ala Pro Pro Pro Ile Ser Gly Gly Gly Tyr Arg

and  $Z_1$  denotes a histidine residue, Arg denotes an arginine residue,  $Z_3$  denotes a proline residue,

Z<sub>4</sub> denotes a leucine residue

prevents fibrin fragments from depositing on or adhering to the vascular wall. Thus, it is rendered impossible that inflammatory cells are retained at the endothelial cells of the vascular walls of arteries and veins, and such cells are prevented from remaining at the vascular walls, thus being prevented from infiltrating the tissue any further.

A peptide or protein of the general formula II, wherein  $Z_5$  denotes a peptide residue comprising the following amino acid sequence (SEQ ID NO: 292):

Glu Arg His Gln Ser Ala Cys Lys Asp Ser Asp Trp

Pro Phe Cys Ser Asp Glu Asp Trp Asn Tyr Lys

and  $Z_1$  denotes a proline residue, Arg denotes an arginine residue,  $Z_3$  denotes a valine residue,  $Z_4$  denotes a valine residue

has the effect of preventing the cells of the peripheral blood from adhering to fibrin or finrin fragments, hence prohibiting their migration in the tissue.

The described cleavage products are also known in the literature as peptide Bbeta and peptide Aalpha. Said above 65 mentioned proadhesive and promigratory path is a completely new one for the system of controlling the migration

4

of cells from the blood into the tissue. This function of the fibrin may be blocked by peptide Bbeta and also by peptide Aalpha.

Therefore, said peptides according to the invention are suitable as therapeutic agents for humans and animals in order to block the migration of cells from the blood into the tissue. Since fibrin or other fibrinogen products produced by proteolytic cleavage, such as, f.i., fibrinogen cleaved by an urokinase-plasminogen-activator, are generated only to a specific and regionally limited extent, i.e. at sites of inflammation, disturbed coagulation, arterial sclerosis, thrombosis and/or tumour growth, the effect of said therapeutic agent is regionally limited, which means that pathological side effects occurring in other places are not to be expected or only to a limited extent.

Preferable and completely unexpected fields of application for the peptides and/or proteins according to the invention consist in the preparation of pharmaceutical compositions for the therapy or prevention of local and/or generalized inflammations in the body in case of infectious genesis, based upon an auto-immune reaction, based upon a rheumatic disease, based upon a disorder in the immune system, based upon a genetic disease, for the prevention and/or therapy of the rejection occurring after organ transplants, of arterial sclerosis, of a reperfusion trauma, based upon arteriosclerotic and/or thrombotic diseases and an increased fibrin deposition. Such a peptide, in particular Bbeta, is also excellently suitable for the preparation of a pharmaceutical composition which accomplishes the transportation of a further drug substance to human or animal endothelial cells. In doing so, the drug substance to be transported is coupled to the peptide at one end and then, via VE-cadherin, deposits on a free spot of the vascular wall, i.e. on an endothelial cell.

In the following, the invention is explained in further detail by way of examples.

# EXAMPLE 1

Preparation of the Fibrinogen Cleavage Products:

Non-polymerizing degradation products of fibrinogen were obtained by means of a decomposition involving cyanogen bromide according to Blombäck et al. (Nature 1968, 218; 130-134). The fibrinogen thus degraded largely consists of a 63 kD fragment, i.e. the N-terminal disulfide knot, NDSK, and comprises Aalpha-chain 1-51, Bbeta-chain 1-118 and gamma-chain 1-78. In order to obtain NDSK-II (NDSK minus fibrinopeptides A and B), the N-terminal amino acids of the Aalpha- and Bbeta-chains were cleaved off with thrombin (20 units/1 µg NDSK) in three hours at room temperature and subsequently were treated with diisopropylfluorophosphate in order to block thrombin activity. The NDSK-II thus obtained consisted of Aalpha-chain 17-51, Bbeta-chain 15-118 and gamma-chain 1-78.

In order to obtain NDSK-uPA, 500 µg of NDSK was treated with 200 units of urokinase-plasminogen-activator (uPA) of Messrs. Technoclone, Vienna, Austria, for one hour at 37° C. The reaction was stopped with 5 mM phenylmethylsulfonyl fluoride. The NDSK-uPA thus obtained is a NDSK and has no fibrinopeptide B.

As a negative control, a second fraction was obtained from the fibrinogen cleavage products referred to as FCB-2 according to Nieuwenhuizen et al. (Biochem Biophys Acta 1983, 715; 531-533), which cleavage products were produced by being treated with cyanogen bromide. FCB-2 is a protein having a size of 43 kD and consists of Aalpha-chain

148-208, Bbeta-chain 191-305 and gamma-chain 95-265. For control purposes, thrombin and diisopropylfluorophosphate were added to said protein. That, however, did not result in any change to the protein (in the following, referred to as FCB-2-thr).

For the purpose of further negative controls, culture medium (RPMI of Messrs. Life techn. Inc., Paisky, UK) was treated with thrombin as above and, subsequently, was inactivated (RPMI-thr) or was treated with uPA as above and was inactivated (RPMI-uPA).

#### **EXAMPLE 2**

Peptide Aalpha (SEQ ID NO: 293) corresponds to amino acids 1 to 28 of the alpha chain of the fibrin and is identical to amino acids 17 to 45 of the Aalpha chain of the fibrinogen:

e) 100 µg of randomized Aalpha

f) 100 µg of randomized Bbeta

Twenty-four hours later, the human skin was removed and the number of inflammatory sites, expressed in cells per 0.3 mm<sup>2</sup>, was evaluated and the mean value was determined with a standard deviation.

6

For a: 22+/-2.8

10 for b: 9+/-2.1

for c: 4+/-1.1

for d: 6+/-1.1

for e: 5+/-1.2

for f: 7+/-1.3

Gly Pro Arg Val Val Glu Arg His Gln Ser Ala Cys Lys Asp Ser Asp Trp Pro Phe Cys Ser Asp Glu Asp Trp Asn

Peptide Bbeta (SEQ ID NO: 294) corresponds to amino 25 acids 1 to 28 of the beta chain of the fibrin and is identical to amino acids 15 to 43 of the Bbeta chain of the fibrinogen, which exhibits the following sequence:

That allows the conclusion that NDSK-II causes inflammations, and hence said protein was used as a pathogenic substance. The other compounds per se do not exhibit any significant increase in the amount of inflammatory cells.

Gly His Arg Pro Leu Asp Lys Lys Arg Glu Glu Ala Pro
Ser Leu Arg Pro Ala Pro Pro Pro Ile Ser Gly Gly
Tyr Arg

By applying a fluorenylmethyloxycarbonyl (FMOC)-protective group strategy according to Carpino L. A. and Han. G Y, J. Amer. Chem. Soc. 1981; 37; 3404-3409, both peptides were synthesized by means of a solid-phase peptide 40 synthesis according to Merrifield R. B., J. Amer. Chem. Soc. 1963; 85, 2149-2154, using a multiple peptide synthesizer. The crude peptides were purified by preparative reversed-phase HPLC via a Nucleosil 100-10, C18-column according to Engelhart H. and Müller H. Chromatography 1984 19:77 as well as Henschen A., Hupe K. P. and Lottspeich F. High Performance Liquid Chromatography VCH 1985. As control peptides, peptides of the same length but comprising a randomized amino acid sequence were used.

### EXAMPLE 3

### **HU-SCID Mouse-Model:**

Human skin was transplanted onto the backs of SCID mice, and two weeks later human lymphocytes were injected into the peritoneum. The proceedings were according to Petzelbauer et al. (J. Invest. Dermatol. 1996, 107; 576-581). Then, fifteen mice thus prepared were injected in their tail veins with the following:

- a) 100 µg of human NDSK-II
- b) 100 μg of human FCB-2
- c) 100 µg of peptide Aalpha
- d) 100 µg of peptide Bbeta

# COMPARATIVE EXAMPLE 4

Fifteen mice according to Example 3 were injected in their tail veins with

 $100 \mu g$  of human NDSK-II and

100 μg of randomized peptide Aalpha.

Further proceedings were according to Example 3. Per 0.3 mm<sup>2</sup>, 23+/-3.5 inflammatory sites could be determined.

# COMPARATIVE EXAMPLE 5

Fifteen mice according to Example 3 were injected in their tail veins with

 $100~\mu g$  of human NDSK-II according to Example 1 and  $100~\mu g$  of randomized peptide Bbeta.

Further proceedings were according to Example 3. Per 0.3 mm<sup>2</sup>, 24+/-2 inflammatory sites could be determined.

# EXAMPLE 6

Fifteen mice according to Example 3 were injected with

100 µg of human NDSK-II and

65 100 μg of synthesized peptide Aalpha.

Further proceedings were according to Example 3. Per 0.3 mm<sup>2</sup>, 21+/-2.2 inflammatory sites could be determined.

### 7 EXAMPLE 7

Fifteen mice according to Example 3 were injected in their tail veins with

100 μg of human NDSK-II and

100 μg of synthesized peptide Bbeta.

Further proceedings were according to Example 3. Per 0.3 mm<sup>2</sup>, 14+/-2 inflammatory sites could be determined.

Examples 4 to 7 show that peptide Bbeta blocks lymphocytic inflammation.

#### **COMPARATIVE EXAMPLE 8**

Endothelial cells from human umbilical veins (HUVEC) were marked with a red fluorescent dye (Cell Tracker Orange, 1 µl/ml, Molecular Probes, Eugene, Oreg.) and were dispersed on a collagen matrix (Collaborative Biomedical Products, Bedford, Mass.). Upon confluence of the endothelial cells, peripheral mononuclear blood cells (PBMC) (10<sup>5</sup> cells per 25 mm²) marked with a green fluorescent dye (Cell Tracker Green, 1 µl/ml, Molecular Probes of Messrs. 25 Eugene, Origon) were superimposed. Thereafter, the cells were incubated at 37° C. for twelve hours.

Adhering cells that had transmigrated into the gel were photographed with a laser-scan microscope, were converted into pixels and were evaluated by means of an "NIH image" according to Gröger et al. (J. Immunol. Method 1999; 222: 101-109).

It was feasible to determine the number of adherent cells per 0.1 mm<sup>2</sup> such as mentioned under "adhesion". It was 35 feasible to determine the number of migrated cells per 0.04 mm<sup>3</sup> such as mentioned under "migration". The mean value of three times three trials was evaluated together with the standard deviation.

			adhesion	migration	
a)	RPMI-uPA	0.1 μg/ml	40 +/- 4	4 +/- 3	-
		1.0 μg/ml	38 +/- 2	5 +/- 2	4.
		10.0 μg/ml	32 +/- 4	5 +/- 1	
b)	NDSK	0.1 μg/ml	31 +/- 18	6 +/- 3	
,		1.0 μg/ml	35 +/- 18	5 +/- 2	
		10.0 μg/ml	36 +/- 24	6 +/- 3	
c)	NDSK-II	0.1 μg/ml	55 +/- 21	12 +/- 5	
		1.0 μg/ml	67 +/- 31	19 +/- 12	50
		10.0 μg/ml	65 +/- 31	19 +/- 10	٠.
d)	NDSK-uPA	0.1 μg/ml	58 +/- 3	10 +/- 2	
		1.0 μg/ml	60 +/- 3.5	14 +/- 3	
		10.0 μg/ml	65 +/- 3	18 +/- 1.5	
e)	FCB2	0.1 μg/ml	30 +/- 26	6 +/- 4	
		1.0 μg/ml	10 +/- 10	3 +/- 2	_
		10.0 μg/ml	21 +/- 7	5 +/- 4	5:
f)	FCB-2-thr	0.1 μg/ml	20 +/- 12	6 +/- 5	
		1.0 μg/ml	23 +/- 13	7 +/- 5	
		10.0 μg/ml	26 +/- 11	4 +/- 2	
g)	RPMI-thr	0.1 μg/ml	29 +/- 15	4 +/- 5	
		1.0 µg/ml	26 +/- 14	5 +/- 5	_
		10.0 μg/ml	41 +/- 20	5 +/- 4	60

That allows the conclusion that NDSK-II results in significant migrations of peripheral blood-monocellular cells (PBMC) to a greater extent than NDSK-uPA and hence 69 exhibits pathogenic activity. None of the controls a), b), e), f) and g) resulted in any significant migration.

# **8** EXAMPLE 9

100 μg of NDSK-II and Bbeta or Bbeta randomized were added to the collagen matrix according to Example 8 comprising the suspension of PBMC, and further proceedings were in accordance with Example 8.

		adhesion	migration
a) b) c) d) e) f) g)	no addition of NDSK-II only 100 μg of NDSK-II 10 μg of Bbeta + NDSK-II 100 μg of Bbeta + NDSK-II 1000 μg of Bbeta + NDSK-II 1000 μg of Bbeta + NDSK-II 100 μg of Bbeta randomized + NDSK-II 1000 μg of Bbeta randomized + NDSK-II	38 +/- 15 73 +/- 29 63 +/- 33 47 +/- 34 52 +/- 27 77 +/- 33 86 +/- 35 78 +/- 31	6 +/- 4 16 +/- 7 7 +/- 4 5 +/- 4 10 +/- 6 16 +/- 6 15 +/- 6

As can be gathered from those test results, peptide Bbeta blocks inflammations.

#### **EXAMPLE 10**

100 μg of NDSK-II and Aalpha or Aalpha randomized were added to the collagen matrix according to Example 8 comprising the suspension of PBMC, and further proceedings were in accordance with Example 8.

		adhesion	migration
b) only c) 10 \( \mu \) d) 100 5 e) 1000 f) 10 \( \mu \) g) 100	ddition of NDSK-II NDSK-II g of Aalpha + NDSK-II µg of Aalpha + NDSK-II µg of Aalpha + NDSK-II g of Aalpha + NDSK-II g of Aalpha randomized + NDSK-II µg of Aalpha randomized + NDSK-II µg of Aalpha randomized + NDSK-II	42 +/- 6 96 +/- 11 69 +/- 12 73 +/- 13 70 +/- 6 70 +/- 6 65 +/- 16 70 +/- 12	10 +/- 1 24 +/- 3 21 +/- 4 15 +/- 6 13 +/- 5 25 +/- 2 24 +/- 3

As can be gathered from the test results, peptide Aalpha blocks the migration of PBMC only partially.

#### EXAMPLE 11

Since PBMC substantially consists of a mixture of lymphocytes and monocytes, pure lymphocytes instead of PBMC (as in Examples 8-10) were used in Example 11.

100 μg of NDSK-uPA or 100 μg of NDSK-II, respectively, and Aalpha or Bbeta, respectively, were added to the collagen matrix according to Example 8 comprising endothelial cells and lymphocytes.

		adhesion	migration
a)	no addition	68 +/- 8	16 +/- 3
b)	NDSK-uPA	143 +/- 11	53 +/- 5
c)	NDSK-II	119 +/- 11	43 +/- 4
d)	only 100 μg of Bbeta	58 +/- 18	14 +/- 1
e)	NDSK-uPA + 100 μg of Bbeta	74 +/- 8	19 +/- 2
f)	NDSK-II + 100 μg of Bbeta	74 +/- 8	17 +/- 3
g)	only 100 µg of Aalpha	77 +/- 4	18 +/- 1
h)	NDSK-uPA + 100 µg of Aalpha	131 +/- 4	40 +/- 3
i)	NDSK-II + 100 µg of Aalpha	131 +/- 4	44 +/- 4
(i	only 100 µg of Bbeta randomized	75 +/- 5	19 +/- 1
k)	NDSK-uPA + 100 μg of Bbeta randomized	134 +/- 13	46 +/- 4
l)	NDSK-II + 100 µg of Bbeta randomized	120 +/- 12	42 +/- 4

Those test results show

1) that both NDSK-II and NDSK-uPA promote lymphocytic inflammation.

2) that peptide Bbeta completely blocks the lymphocytic adhesion and migration induced by NDSK-II and NDSKuPA, whereas peptide Aalpha exhibits no blocking activity, which suggests that the free alpha-chain is not required for inducing the adhesion and migration of the lymphocytes.

# EXAMPLE 12

The proceedings were in accordance with Example 11, except for pure monocytes being used instead of lymphocytes. 100 µg of NDSK-uPA or 100 µg of NDSK-II, respectively, was added to peptide Aalpha, randomized Aalpha, Bbeta or randomized Bbeta.

		adhesion	migration	2
a)	no addition	43 +/- 8	7 +/- 1	
b)	NDSK-uPA	48 +/- 10	10 +/- 2	
c)	NDSK-II	90 +/- 11	19 +/- 6	
d)	100 μg of Bbeta	59 +/- 7	5 +/- 1	
e)	NDSK-uPA + 100 µg of Bbeta	61 +/- 11	8 +/- 3	2:
f)	NDSK-II + 100 µg of Bbeta	70 +/- 7	7 +/- 5	2.
g)	100 μg of Bbeta randomized	40 +/- 7	6 +/- 1	
h)	NDSK-uPA + 100 μg of Bbeta randomized	45 +/- 5	8 +/- 3	
g)	NDSK-II + 100 µg of Bbeta randomized	92 +/- 10	20 +/- 7	
i)	100 μg of Aalpha	59 +/- 6	5 +/- 1	
k)	NDSK-uPA + 100 µg of Aalpha	62 +/- 4	8 +/- 5	30
1)	NDSK-II + 100 µg of Aalpha	68 +/- 10	9 +/- 6	
m)	100 μg of Aalpha randomized	58 +/- 7	6 +/- 1	
n)	NDSK-uPA + 100 μg of Aalpha randomized	50 +/- 10	10 +/- 4	
0)	NDSK-II + 100 µg of Aalpha randomized	108 +/- 8	21 +/- 5	26

Those test results show that only NDSK-II and not NDSK-uPA promotes the migration of monocytes, which means that both the alpha-chain and the beta-chain have to exhibit a free N-terminal end and block the migration of the monocytes.

# EXAMPLE 13

The proceedings were in accordance with Example 11, 45 with pure lymphocytes being used. 100 µg of NDSK-uPA or 100 µg of NDSK-II, respectively, was added to the short peptide salts derived from Aalpha Gly Pro Arg (Pro)—NH<sub>2</sub> acetate (Aalpha derivative) or derived from Bbeta Gly His Arg Pro-OH acetate (Bbeta derivative).

		adhesion	migration
a)	no addition	60 +/- 8	14 +/- 1
b)	NDSK-uPA	149 +/- 12	57 +/- 5
c)	NDSK-II	121 +/- 11	48 +/- 7
d)	only 100 µg of Bbeta derivative	58 +/- 10	12 +/- 9
e)	NDSK-uPA + 100 μg of Bbeta derivative	70 +/- 8	16 +/- 3
f)	NDSK-II + 100 µg of Bbeta derivative	69 +/- 7	14 +/- 5
g)	only 100 μg of Aalpha derivative	77 +/- 4	18 +/- 1
h)	NDSK-uPA + 100 µg of Aalpha derivative	134 +/- 4	48 +/- 5
i)	NDSK-II + 100 μg of Aalpha derivative	131 +/- 7	49 +/- 6
j)	only 100 µg of Bbeta derivative randomized	70 +/- 5	14 +/- 7
k)	NDSK-uPA + 100 µg of Bbeta derivative		
	randomized	130 +/- 12	49 +/- 6
l)	NDSK-II + 100 µg of Bbeta derivative		_
	randomized	120 +/- 10	55 +/- 8

10

Said experiment allows the conclusion that, if lymphocytic migration is inhibited, those short peptides, added continuously in an appropriate manner, exhibit the same activity as do the long peptides.

#### EXAMPLE 14

The proceedings were in accordance with Example 12, with pure monocytes being used. 100 mg of NDSK-uPA or 100 μg of NDSK-II, respectively, was added to the short peptide salts Aalpha Gly Pro Arg (Pro)—NH<sub>2</sub> acetate (Aalpha derivative) or Bbeta Gly His Arg Pro-OH acetate (Bbeta derivative).

		adhesion	migration
a)	no addition	40 +/- 8	5 +/- 1
b)	NDSK-uPA	54 +/- 9	7 +/- 2
c)	NDSK-II	85 +/- 11	22 +/- 6
d)	100 μg of Bbeta derivative	52 +/- 7	6 +/- 1
e)	NDSK-uPA + 100 µg of Bbeta derivative	61 +/- 11	8 +/- 3
ń	NDSK-II + 100 µg of Bbeta derivative	68 +/- 7	8 +/- 4
g)	100 µg of Bbeta derivative randomized	40 +/- 7	6 +/- 1
h)	NDSK-uPA + 100 μg of Bbeta derivative randomized	44 +/- 6	8 +/- 2
i)	NDSK-II + 100 μg of Bbeta derivative randomized	92 +/- 10	23 +/- 7
i)	100 μg of Aalpha derivative	50 +/- 5	4 +/- 4
k)	NDSK-uPA + 100 µg of Aalpha derivative	60 +/- 5	7 +/- 6
í)	NDSK-II + 100 µg of Aalpha derivative	64 +/- 11	8 +/- 2
m)	100 μg of Aalpha derivative randomized	54 +/- 10	6 +/- 3
n)	NDSK-uPA + 100 μg of Aalpha derivative randomized	50 +/- 10	10 +/- 4
0)	NDSK-II + 100 μg of Aalpha derivative randomized	99 +/- 8	21 +/- 7

Said experiment allows the conclusion that, if monocytic migration is inhibited, those short peptides, added continuously in an appropriate manner, exhibit the same activity as do the long peptides.

#### **EXAMPLE 15**

The tests were carried out on male wistar rats weighing between 220 g and 280 g. The rats were given standard food and water. For carrying out the test, the rats were anaesthetized and artifically respirated with a frequency of 70 pulses per minute, whereby from 8 ml to 10 ml per kilogram of a gas containing 30% by volume of oxygen and having an overpressure of from 1 mm to 2 mm mercury was emitted. The cardiac artery on the right hand side was equipped with 50 a measuring cannula, and the blood pressure in the artery as well as the heartbeats were determined. The pressure rate was determined as a product of the blood pressure in the artery and of the heartbeat rate with the dimension mm mercury/minute/103. The vein on the right hand side was 55 equipped with a measuring cannula for doping the test substances. After carrying out the surgical treatment, 2 ml of rat blood was supplied to the heart. Thirty minutes later, the cardiac artery on the left hand side was occluded. Another twenty-five minutes later, the occlusion was released in 60 order to resupply the ischaemic area with blood. At that point of time, 800 µg/kg of peptide Bbeta or peptide Bbeta randomized, respectively, was intravenously administered to half of the animals, and then two hours were allowed to pass.

In order to distinguish between damaged and undamaged cardiac tissue, the cardiac artery on the left hand side was then supplied with evans blue dye at a concentration of 2% by weight. Thereupon, the removed heart was dissected by

five horizontal cuts, the right hand wall of the vein was removed and the sections were treated with triphenyltetratolchloride (1% by weight) for twenty minutes at 37° C. so as to be able to distinguish between normal tissue and infarct tissue. The sections were evaluated by computer-sustained 5 planimetry.

Because of the vascular occlusion, 62.5% of the cardiac muscle in the hearts of the reference rats was threatened, as opposed to 60% in the hearts of the test rats. In the hearts of the reference rats, 46% of the endangered tissue was dead, 10 as opposed to 29% in the hearts of the test rats. That corresponds to a 37% reduction of dead tissue (p<0.05).

The substances according to the invention as well as the use of the substances according to the invention for preparing a pharmaceutical composition are of special signifi- 15 cance:

For a pharmaceutical composition used in the therapy of diseases caused by the tissue-damaging effect of autoreactive lymphocytes.

Among those are diseases fitting into the sphere of 20 autoimmunity, such as collagenoses, rheumatic diseases, psoriasis and post-/parainfectious diseases and diseases caused by a graft versus host reaction. A healing effect occurs, since said pharmaceutical composition blocks the migration of lymphocytes into the tissue. Thus, the lymphocytes remain in the bloodstream and are incapable of producing an autoreactive tissue-damaging effect.

A healing effect occurs with a drug for the therapy and/or prevention of the rejection occurring after organ transplants, since said drug prevents the migration of lymphocytes from 30 the bloodstream into the foreign organ and hence the foreign organ cannot be destroyed by autoreactive lymphocytes.

A healing effect occurs with a drug for the therapy and/or prevention of arterial sclerosis after organ transplants, since said drug prohibits the migration of lymphocytes and monocytes into the vascular wall and hence prevents the activation of the cells of the vascular wall. In doing so, the occurrence of arterial sclerosis following organ transplants is minimized or prevented.

A healing effect occurs with a drug for the therapy and/or 40 prevention of a reperfusion trauma following a surgically or pharmaceutically induced restoration of the blood flow such as, f.i. after cardiac infarction, apoplectic stroke, after vascular surgery, bypass surgery and organ transplants, since said drug inhibits the migration of lymphocytes and mono- 45 cytes into the vascular wall. The reperfusion trauma is caused by oxygen deficiency/acidosis occurring in the cells of the vessel during the restoration of the blood flow and leads to their activation. Thereby, lymphocytes and monocytes adhere to the vascular wall and migrate into the same. 50 The fact that lymphocytes and monocytes are prevented from adhering to and migrating into the vascular wall brings about a decrease in the hypoxia/acidosis-induced damage, without any permanent vascular damage being caused by the subsequent inflammatory reaction.

A healing effect occurs with a drug for the therapy and/or prevention of arterial sclerosis following metabolic diseases or ageing processes, since said drug inhibits the migration of lymphocytes and monocytes into the vascular wall and hence inhibits the progredience of the arteriosclerotic plaque 60 resulting therefrom.

The pharmaceutical composition according to the invention may also be used for transporting a further drug substance. The pharmaceutical composition according to the invention specifically binds a surface molecule to endothelial cells. Thus, drug substances coupled thereto may be contacted with endothelial cells at high concentrations,

without them being able to trigger side reactions in other places. The use of substances inhibiting cell division may be mentioned as an example, which substances may exhibit an antiangiogenetic effect after having been adducted specifically to endothelial cells. In that case, tumour patients experience a healing effect, since the growth of the tumour is blocked by preventing the proliferation of endothelial cells and hence by avoiding neoangiogenesis.

12

TABLE 1

	Peptides of Formula I; Gly-His/Pro-Arg-Xaa2-Xaa20	
		SEQ ID
5	SEQUENCE	NO
	Gly His Arg	1
	Gly Pro Arg	2
	Gly His Arg Xaa Gly Pro Arg Xaa	3 4
_	Gly His Arg Xaa Xaa	5
0	Gly Pro Arg Xaa Xaa	6
	Gly His Arg Xaa Xaa Xaa	7
	Gly Pro Arg Xaa Xaa Xaa	8
	Gly His Arg Xaa Xaa Xaa Xaa Gly Pro Arg Xaa Xaa Xaa Xaa	9 10
	Gly His Arg Xaa Xaa Xaa Xaa Xaa	11
5	Gly Pro Arg Xaa Xaa Xaa Xaa Xaa	12
	Gly His Arg Xaa Xaa Xaa Xaa Xaa Xaa	13
	Gly Pro Arg Xaa Xaa Xaa Xaa Xaa Xaa Gly Hig Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	14
	Gly His Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Gly Pro Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa	15 16
	Gly His Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa	17
)	Gly Pro Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa	18
	Gly His Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa	19
	Gly Pro Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Gly His Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	20 21
	Gly Pro Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	22
	Gly His Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	23
5	Gly Pro Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	24
	Gly His Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	25
	Xaa Gly Pro Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	26
	Gly His Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	27
)	Xaa Xaa Gly Pro Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	28
	Xaa Xaa Giy His Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	29
	Xaa Xaa Xaa Gly Pro Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	30
•	Xaa Xaa Xaa Giy His Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	31
	Xaa Xaa Xaa Xaa Ciy Pro Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	32
	Xaa Xaa Xaa Xaa Gly His Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	295
,	Xaa Xaa Xaa Xaa Xaa Giy Pro Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	296
	Xaa Xaa Xaa Xaa Xaa Gly His Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	33
	Xaa Xaa Xaa Xaa Xaa Xaa Gly Pro Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	34
	Xaa Xaa Xaa Xaa Xaa Xaa Gly His Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	35
	Xaa Xaa Xaa Xaa Xaa Xaa Xaa Ciy Pro Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	36
	Xaa	37
	Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Giy Pro Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	38
	Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Giy His Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	39
	Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Gly Pro Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	40
	Xaa	41
	Xaa	42

14

TARIE	1-continued
125131.45	1-commucu

Peptides of Formula I: Gly-His/Pro-Arg-Xaa <sub>2</sub> -Xaa <sub>29</sub>		Peptides of Formula I: Gly-His/Pro-Arg-Xaa <sub>2</sub> -Xaa <sub>29</sub>	
sequence	SEQ ID NO	SEQUENCE	SEQ ID NO
Xaa	43	Gly Pro Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	52 53
Gly Pro Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	44 45	Xaa	54
Gly Pro Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	46 47	Xaa	55
Xaa	48	20 Xaa Xaa Xaa Giy Pro Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	56
Gly His Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	49 50	Gly His Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	57
Kaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa	51	Gly Pro Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	58

TABLE 2

	_	Pe	ptid	es o	f Fo	rmula	a II: Gly-His/Pro-Arg-Pro/Val-Leu/Val-Xaa <sub>2</sub> -Xaa <sub>30</sub>	_
SEQ	SEQUENCE SEQ I							Q ID NO
Gly	His	Arg	Pro	Leu	Xaa	Xaa		59
Gly	Pro	Arg	Pro	Leu	Xaa	Xaa		60
Gly	His	Arg	Val	Leu	Xaa	Xaa		61
Gly	Pro	Arg	Val	Leu	Xaa	Xaa		62
Gly	His	Arg	Pro	Val	Xaa	Xaa		63
Gly	Pro	Arg	Pro	Val	Xaa	Xaa		64
Gly	His	Arg	Val	Val	Xaa	Xaa		65
Gly	Pro	Arg	Val	Val	Xaa	Xaa		66
Gly	His	Arg	Pro	Leu	Xaa	Xaa	Xaa	67
Gly	Pro	Arg	Pro	Leu	Xaa	Xaa	Xaa	68
Gly	His	Arg	Val	Leu	Xaa	Xaa	Xaa	69
Gly	Pro	Arg	Val	Leu	Xaa	Xaa	Xaa	70
Gly	His	Arg	Pro	Val	Xaa	Xaa	Xaa	71
Gly	Pro	Arg	Pro	Val	Xaa	Xaa	Xaa	72

Peptides of Formula II: Gly-His/Pro-Arq-Pro/Val-Leu/Val-Xa	
SEQUENCE	SEQ ID NO
Gly His Arg Val Val Xaa Xaa Xaa	73
Gly Pro Arg Val Val Xaa Xaa Xaa	74
Gly His Arg Pro Leu Xaa Xaa Xaa Xaa	75
Gly Pro Arg Pro Leu Xaa Xaa Xaa Xaa	76
Gly His Arg Val Leu Xaa Xaa Xaa Xaa	77
Gly Pro Arg Val Leu Xaa Xaa Xaa Xaa	78
Gly His Arg Pro Val Xaa Xaa Xaa Xaa	79
Gly Pro Arg Pro Val Xaa Xaa Xaa Xaa	80
Gly His Arg Val Val Xaa Xaa Xaa	81
Gly Pro Arg Val Val Xaa Xaa Xaa Xaa	82
Gly His Arg Pro Leu Xaa Xaa Xaa Xaa Xaa	83
Gly Pro Arg Pro Leu Xaa Xaa Xaa Xaa Xaa	84
Gly His Arg Val Leu Xaa Xaa Xaa Xaa Xaa	85
Gly Pro Arg Val Leu Xaa Xaa Xaa Xaa Xaa	86
Gly His Arg Pro Val Xaa Xaa Xaa Xaa Xaa	87
Gly Pro Arg Pro Val Xaa Xaa Xaa Xaa Xaa	88
Gly His Arg Val Val Xaa Xaa Xaa Xaa Xaa	89
Gly Pro Arg Val Val Xaa Xaa Xaa Xaa Xaa	90
Gly His Arg Pro Leu Xaa Xaa Xaa Xaa Xaa Xaa	91
Gly Pro Arg Pro Leu Xaa Xaa Xaa Xaa Xaa Xaa	92
Gly His Arg Val Leu Xaa Xaa Xaa Xaa Xaa Xaa	93
Gly Pro Arg Val Leu Xaa Xaa Xaa Xaa Xaa Xaa	94
Gly His Arg Pro Val Xaa Xaa Xaa Xaa Xaa Xaa	95
Gly Pro Arg Pro Val Xaa Xaa Xaa Xaa Xaa Xaa	96
Gly His Arg Val Val Xaa Xaa Xaa Xaa Xaa Xaa	97
Gly Pro Arg Val Val Xaa Xaa Xaa Xaa Xaa Xaa	98
Gly His Arg Pro Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa	99
Gly Pro Arg Pro Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa	100
Gly His Arg Val Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa	101
Gly Pro Arg Val Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa	102
Gly His Arg Pro Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa	103
Gly Pro Arg Pro Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa	104
Gly His Arg Val Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa	105
Gly Pro Arg Val Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa	106
Gly His Arg Pro Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa	107
Gly Pro Arg Pro Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa	108
Gly His Arg Val Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa	109

Peptides of Formula II: Gly-His/Pro-Arq-Pro/Val-Leu/Val-Xaa2-Xaa30													
SEQUENCE	SEQ ID NO												
Gly Pro Arg Val Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa	110												
Gly His Arg Pro Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa	111												
Gly Pro Arg Pro Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa	112												
Gly His Arg Val Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa	113												
Gly Pro Arg Val Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa	114												
Gly His Arg Pro Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa	115												
Gly Pro Arg Pro Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa	116												
Gly His Arg Val Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa	117												
Gly Pro Arg Val Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa	118												
Gly His Arg Pro Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa	119												
Gly Pro Arg Pro Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa	120												
Gly His Arg Val Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa	121												
Gly Pro Arg Val Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa	122												
Gly His Arg Pro Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	123												
Gly Pro Arg Pro Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	124												
Gly His Arg Val Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	125												
Gly Pro Arg Val Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	126												
Gly His Arg Pro Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa X	127												
Gly Pro Arg Pro Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa X	128												
Gly His Arg Val Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa X	129												
Gly Pro Arg Val Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa X	130												
Gly His Arg Pro Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	131												
Gly Pro Arg Pro Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	132												
Gly His Arg Val Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	133												
Gly Pro Arg Val Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	134												
Gly His Arg Pro Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa X	135												
Gly Pro Arg Pro Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa X	136												
Gly His Arg Val Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa X	137												
Gly Pro Arg Val Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa X	138												
Gly His Arg Pro Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	139												
Gly Pro Arg Pro Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	140												
Gly His Arg Val Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	141												
Gly Pro Arg Val Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	142												
Gly His Arg Pro Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa X	143												
Gly Pro Arg Pro Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa X	144												
Gly His Arg Val Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa X	145												
Gly Pro Arg Val Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa X	146												
Gly His Arg Pro Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xa	147												

		Pe	ptid	les o	f Fo	rmu <u>l</u>	a II	: <u>G</u> 1	y-Hi	s/Pr	o-Ar	q-Pr	o/Va	l-Le	u/Va	l-Xa	a <sub>2</sub> -Xa	a <sub>30</sub>
SEC	UENC	E																SEQ ID NO
Gly	Pro	Arg	Pro	Leu	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	. Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	148
Gly	His	Arg	Val	. Leu	Хаа	Xaa	Хаа	Xaa	Xaa	Хаа	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	149
Gly	Pro	Arg	Val	Leu	Xaa	Xaa	Xaa	Хаа	. Xaa	Xaa	Xaa	Хаа	Xaa	Xaa	Xaa	Xaa	Xaa	150
Gly	His	Arg	Pro	Val	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Хаа	Xaa	Xaa	Xaa	Xaa	Xaa	151
Gly	Pro	Arg	Pro	Val	Xaa	Xaa	Xaa	Xaa	Xaa	Хаа	Хаа	Хаа	Xaa	Xaa	Xaa	Xaa	Xaa	152
Gly	His	Arg	Val	Val	Xaa	Xaa	Xaa	Xaa	Хаа	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	153
Gly	Pro	Arg	Val	Val	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	154
Gly Xaa		Arg	Pro	Leu	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Хаа	Xaa	Xaa	Xaa	Xaa	Xaa	155
Gly Xaa		Arg	Pro	Leu	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	156
Gly Xaa		Arg	Val	Leu	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	157
Gly Xaa		Arg	Val	Leu	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	158
Gly Xaa		Arg	Pro	Val	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Хаа	Xaa	Xaa	Хaа	Xaa	Xaa	159
Gly Xaa		Arg	Pro	Val	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	160
Gly Xaa		Arg	Val	Val	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	161
Gly Xaa		Arg	Val	Val	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	162
	His Xaa		Pro	Leu	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	163
	Pro Xaa		Pro	Leu	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	164
Gly Xaa	His Xaa	Arg	Val	Leu	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Хаа	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	165
Gly Xaa	Pro Xaa	Arg	Val	Leu	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	166
	His Xaa	Arg	Pro	Val	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	167
Gly Xaa	Pro Xaa	Arg	Pro	Val	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	168
Xaa	Xaa											Xaa						169
Xaa	Xaa											Xaa						170
Xaa	Xaa	Xaa										Xaa						171
Xaa	Xaa	Xaa										Xaa						172
Xaa	Xaa											Xaa						173
Gly Xaa	Pro Xaa	Arg Xaa	Val	Leu	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	174

	Peptides of Formula II: Gly-His/Pro-Arg-Pro/Val-Leu/Val-Xaa2-Xaa30														a <sub>30</sub>			
SFOI	UENCI		<u> </u>	<u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	10.	<u> </u>				<del></del> -								SEQ ID NO
	His		Pro	Val	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	175
Xaa	Xaa	Xaa																
	Pro Xaa		Pro	Val	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	176
	His Xaa		Val	Val	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	177
	Pro Xaa		Val	Val	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	178
	His Xaa				Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	179
-	Pro Xaa	-			Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	180
Gly		Arg	Val	Leu	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	181
Gly	Pro	Arg	Val	Leu	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	182
Gly		Arg	Pro	Val	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	183
Gly		Arg	Pro	Val	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	184
	Xaa His				Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	185
	Xaa Pro				Хаа	Хаа	Хаа	Хаа	Xaa	Xaa	Хаа	Хаа	Хаа	Хаа	Хаа	Хаа	Xaa	186
Xaa	Xaa	Xaa	Xaa															
_	His Xaa	-				Xaa	Xaa	Xaa	Xaa	Хаа	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	187
	Pro Xaa				Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	188
	His Xaa				Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	189
	Pro Xaa				Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	190
_	His Xaa	•			Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	191
	Pro Xaa				Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	192
	His Xaa				Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	193
	Pro Xaa				Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	194
Gly	His Xaa	Arg	Pro	Leu		Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Хаа	Xaa	Xaa	Xaa	195
Gly	Pro Xaa	Arg	Pro	Leu	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	196
Gly	His Xaa	Arg	Val	Leu	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	197
Gly	Pro	Arg	Val	Leu	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	198
Gly	His	Arg	Pro	Val	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	199
Kaa	Xaa	лаа	xaa	лаа	хаа													

	Peptides of Formula II: Gly-His/Pro-Arg-Pro/Val-Leu/Val-Xaa,-Xaa,0																		
SEQ	UENC	E		_													_	SEQ I	D NO
					Xaa Xaa		Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	20	0
					Xaa Xaa		Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	20	1
Gly	Pro	Arg	Val	Val	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	20	2
					Xaa Xaa		Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	20	3
					Xaa Xaa			Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	20	4
					Xaa			Vaa	Vas	Vas	Vas	Vas	Vaa	Vaa	Vas	Van	Xaa	20	5
					Хаа			лаа	Ada	Aaa	лаа	Add	Add	Add	Add	Aaa	Add	20	,
					Xaa Xaa			Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	20	6
					Xaa Xaa			Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	20	7
					Xaa Xaa			Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	20	8
					Xaa Xaa			Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	20	9
					Xaa Xaa			Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	21	0
Gly	His	Arg	Pro	Leu	Xaa Xaa	Xaa	Xaa		Xaa	21	1								
Gly	Pro	Arg	Pro	Leu	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	21	2
Gly	His	Arg	Val	Leu		Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	21	3
					Xaa Xaa				Xaa	21	4								
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa Xaa	Xaa	Xaa											21	5
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa											21	
					Xaa Xaa				Xaa	Хаа	Xaa	Хаа	Xaa	Xaa	Xaa	Xaa	Xaa	21	6
					Xaa Xaa			Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	21	7
Gly Xaa	Pro Xaa	Arg Xaa	Val Xaa	Val Xaa	Xaa Xaa	Xaa Xaa	Xaa Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	21	8
Gly Xaa	His Xaa	Arg Xaa	Pro Xaa	Leu Xaa	Xaa Xaa	Xaa Xaa	Xaa Xaa	Xaa Xaa	Xaa	21	9								
Gly Xaa	Pro Xaa	Arg Xaa	Pro Xaa	Leu Xaa	Xaa Xaa	Xaa Xaa	Xaa Xaa	Xaa Xaa	Xaa	22	0								
Gly Xaa	His Xaa	Arg Xaa	Val Xaa	Leu Xaa	Xaa Xaa	Xaa Xaa	Xaa Xaa	Xaa Xaa	Xaa	22	1								
Gly	Pro	Arg	Val	Leu	Xaa Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	22	2
Gly	His	Arg	Pro	Val	Xaa Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	22	3
Gly	Pro	Arg	Pro	Val	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	22	1
vaa	лаа	хаа	хаа	хаа	Xaa	Xaa	Xaa	Xaa											

	Peptides of Formula II: Gly-His/Pro-Arq-Pro/Val-Leu/Val-Xaa2-Xaa30																		
SEQ	UENCI																		ID NO
	His Xaa									Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	:	225
-	Pro Xaa	-								Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	;	226
-	His Xaa	_									Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	:	227
_	Pro Xaa	_									Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	:	228
	His Xaa										Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	:	229
	Pro Xaa										Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	:	230
_	His Xaa	-									Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	:	231
	Pro Xaa										Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	:	232
_	His Xaa	-									Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	:	233
_	Pro Xaa	-									Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	:	234
_	His Xaa	-										Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	:	235
_	Pro Xaa	_										Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	:	236
_	His Xaa	-										Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	:	237
-	Pro Xaa	_										Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	:	238
_	His Xaa	_									Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	:	239
	Pro Xaa										Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	:	240
	His Xaa										Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	:	241
	Pro Xaa										Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	2	242
	His Xaa											Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	:	243
	Pro Xaa											Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	2	244
_	His Xaa	-										Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	2	245
	Pro Xaa											Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	2	246
	His Xaa											Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	2	247
Gly Xaa	Pro Xaa	Arg Xaa	Pro Xaa	Val Xaa	Xaa Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	2	248						
Gly Xaa	His Xaa	Arg Xaa	Val Xaa	Val Xaa	Xaa Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	2	249						

TABLE 2-continued

								_			1101		_	_T ev	/Val	Yas	- Yaz	3	
	-	Per	tide	<u>s 01</u>	roi	rmula	1 11:	GI	<u>/-H</u> 11	S/PIC	)-Arc	-PIC	)/ <u>va</u>	-Let	17 V <u>al</u>	-Adc	ı₂-Xa≀		ח אים
_	JENCI													**			V	SEQ I	
						Xaa Xaa						хаа	хаа	хаа	хаа	хаа	Xda	25	U
						Xaa Xaa							Xaa	Xaa	Xaa	Xaa	Xaa	25	1
						Xaa Xaa							Xaa	Xaa	Xaa	Xaa	Xaa	25	2
						Xaa Xaa							Xaa	Xaa	Xaa	Xaa	Xaa	25	3
						Xaa Xaa							Xaa	Xaa	Xaa	Xaa	Xaa	25	4
						Xaa Xaa							Xaa	Xaa	Xaa	Xaa	Xaa	25	5
						Xaa Xaa							Xaa	Xaa	Xaa	Xaa	Xaa	25	6
						Xaa Xaa							Xaa	Xaa	Xaa	Xaa	Xaa	25	57
						Xaa Xaa							Xaa	Xaa	Xaa	Xaa	Xaa	25	8
						Xaa Xaa								Xaa	Xaa	Xaa	Xaa	25	59
Gly	Pro	Arg	Pro	Leu	Xaa	Xaa Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	26	50
Gly	His	Arg	Val	Leu	Xaa	Xaa Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	26	51
Gly	Pro	Arg	Val	Leu	Xaa	Xaa Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	26	52
Gly	His	Arg	Pro	Val	Xaa	Xaa Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa		Xaa	Xaa		26	5 3
Gly	Pro	Arg	Pro	Val	Xaa		Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa		Xaa	Xaa	Xaa	26	54
Gly	His	Arg	Val	Val	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa		Xaa	Xaa		26	55
Gly	Pro	Arg	Val	Val	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa		Xaa	Xaa	Xaa	26	56
Gly	His	Arg	Pro	Leu	Xaa	Xaa Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa		Xaa	Xaa	Xaa	26	57
Gly	Pro	Arg	Pro	Leu	Xaa	Xaa Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	26	58
						Xaa Xaa									Xaa	Xaa	Xaa	26	59
						Xaa Xaa									Xaa	Xaa	Xaa	27	70
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa				27	
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa				27	
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa				27	
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa					
Xaa	Yro Xaa	Arg Xaa	val Xaa	Xaa	xaa Xaa	Xaa Xaa	Xaa Xaa	Xaa Xaa	Xaa Xaa	Xaa Xaa	Xaa Xaa	Xaa Xaa	Xaa Xaa	Xaa Xaa	Xaa	Xaa	Xaa	27	4

	Peptides of Formula II: Gly-His/Pro-Arq-Pro/Val-Leu/Val-Xaa2-Xaa30																		
SEQ	JENCI	E																SEQ ID	NO
	His Xaa															Xaa	Xaa	275	
	Pro Xaa															Xaa	Xaa	276	
	His Xaa															Xaa	Xaa	277	
-	Pro Xaa	-														Xaa	Xaa	278	
-	His Xaa	-														Xaa	Xaa	279	
	Pro Xaa															Xaa	Xaa	280	
	His Xaa																	281	
_	Pro Xaa	_														Xaa	Xaa	282	
	His Xaa																Xaa	283	
-	Pro Xaa	-															Xaa	284	
-	His Xaa	-															Xaa	285	
_	Pro Xaa	-															Xaa	286	
_	His Xaa	_															Xaa	287	
Gly	Pro Xaa	Arg	Pro	Val	Xaa	288													
Gly	His	Arg	Val	Val	Xaa	289													
	Xaa Pro																Xaa	290	
Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa	Xaa			

# SEQUENCE LISTING

```
<160> NUMBER OF SEQ ID NOS: 296

<210> SEQ ID NO 1
<211> LENGTH: 3
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<400> SEQUENCE: 1

Gly His Arg
1

<210> SEQ ID NO 2
<211> LENGTH: 3
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
```

```
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<400> SEQUENCE: 2
Gly Pro Arg
<210> SEQ ID NO 3
<211> LENGTH: 4
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: 4
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 3
Gly His Arg Xaa
<210> SEQ ID NO 4
<211> LENGTH: 4
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: 4
<223> OTHER INFORMATION: Xaa-any amino acid
<400> SEQUENCE: 4
Gly Pro Arg Xaa
<210> SEQ ID NO 5 <211> LENGTH: 5
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(5)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 5
Gly His Arg Xaa Xaa
<210> SEQ ID NO 6
<211> LENGTH: 5
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(5)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 6
Gly Pro Arg Xaa Xaa
<210> SEQ ID NO 7
<211> LENGTH: 6
```

```
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(6)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 7
Gly His Arg Xaa Xaa Xaa
<210> SEQ ID NO 8
<211> LENGTH: 6
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(6)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 8
Gly Pro Arg Xaa Xaa Xaa
<210> SEQ ID NO 9
<211> LENGTH: 7
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(7)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 9
Gly His Arg Xaa Xaa Xaa Xaa
<210> SEQ ID NO 10
<211> LENGTH: 7
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(7)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 10
Gly Pro Arg Xaa Xaa Xaa Xaa
<210> SEQ ID NO 11
<211> LENGTH: 8
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(8)
<223> OTHER INFORMATION: Xaa-any amino acid
<400> SEQUENCE: 11
```

```
Gly His Arg Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 12
<211> LENGTH: 8
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(8)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 12
Gly Pro Arg Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 13
<211> LENGTH: 9
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(9)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 13
Gly His Arg Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEO ID NO 14
<211> LENGTH: 9
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(9)
<223> OTHER INFORMATION: Xaa-any amino acid
<400> SEQUENCE: 14
Gly Pro Arg Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 15
<211> LENGTH: 10
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(10)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 15
Gly His Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 16
<211> LENGTH: 10
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
```

37

38

```
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(10)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 16
Gly Pro Arg Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 17
<211> LENGTH: 11
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(11)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEOUENCE: 17
Gly His Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 18
<211> LENGTH: 11
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(11)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 18
Gly Pro Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 19
<211> LENGTH: 12
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(12)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 19
Gly His Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 20
<211> LENGTH: 12
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(12)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEOUENCE: 20
Gly Pro Arg Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
```

```
<211> LENGTH: 13
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(13)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 21
5
<210> SEQ ID NO 22
<211> LENGTH: 13
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(13)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 22
10
<210> SEQ ID NO 23
<211> LENGTH: 14
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(14)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 23
<210> SEQ ID NO 24
<211> LENGTH: 14
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(14) <223> OTHER INFORMATION: Xaa=any amino acid
<400> SEOUENCE: 24
10
<210> SEQ ID NO 25
<211> LENGTH: 15
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(15)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 25
```

```
10
<210> SEQ ID NO 26
<211> LENGTH: 15
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(15)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 26
<210> SEQ ID NO 27
<211> LENGTH: 16
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(16)
<223> OTHER INFORMATION: Kaa=any amino acid
<400> SEQUENCE: 27
<210> SEQ ID NO 28
<211> LENGTH: 16
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(16)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 28
10
<210> SEQ ID NO 29
<211> LENGTH: 17
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(17)
<223> OTHER INFORMATION: Xaa-any amino acid
<400> SEQUENCE: 29
10
Xaa
<210> SEQ ID NO 30
<211> LENGTH: 17
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
```

-continued

43

```
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(17)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 30
10
Xaa
<210> SEQ ID NO 31
<211> LENGTH: 18
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(18)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 31
10
Xaa Xaa
<210> SEQ ID NO 32
<211> LENGTH: 18
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(18)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 32
5
                              10
Xaa Xaa
<210> SEQ ID NO 33
<211> LENGTH: 20
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(20)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 33
Xaa Xaa Xaa Xaa
<210> SEQ ID NO 34
<211> LENGTH: 20
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
```

```
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(20)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 34
Xaa Xaa Xaa Xaa
<210> SEQ ID NO 35
<211> LENGTH: 21
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(21)
<223> OTHER INFORMATION: Xaa-any amino acid
<400> SEQUENCE: 35
10
Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 36
<211> LENGTH: 21
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(21)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 36
Xaa Xaa Xaa Xaa
<210> SEQ ID NO 37
<211> LENGTH: 22
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(22)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 37
10
Xaa Xaa Xaa Xaa Xaa
          20
<210> SEQ ID NO 38
<211> LENGTH: 22
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
```

```
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(22)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 38
Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 39
<211> LENGTH: 23
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(23)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 39
Xaa Xaa Xaa Xaa Xaa Xaa
         20
<210> SEQ ID NO 40
<211> LENGTH: 23
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(23)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 40
Xaa Xaa Xaa Xaa Xaa Xaa
         20
<210> SEQ ID NO 41
<211> LENGTH: 24
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(24)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 41
Xaa Xaa Xaa Xaa Xaa Xaa Xaa
         20
<210> SEQ ID NO 42
<211> LENGTH: 24
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
```

```
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(24)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 42
10
Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 43
<211> LENGTH: 25
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(25)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 43
10
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
         20
<210> SEQ ID NO 44
<211> LENGTH: 25
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(25)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 44
5
                             1.0
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
         20
<210> SEQ ID NO 45
<211> LENGTH: 26
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(26)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 45
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 46
<211> LENGTH: 26
<212> TYPE: PRT
```

```
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(26)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 46
10
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
        20
<210> SEQ ID NO 47
<211> LENGTH: 27
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(27)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 47
20
<210> SEQ ID NO 48
<211> LENGTH: 27
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(27)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 48
20
<210> SEQ ID NO 49
<211> LENGTH: 28
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(28)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 49
<210> SEQ ID NO 50
```

<211> LENGTH: 28

```
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(28)
<223> OTHER INFORMATION: peptide of formula I Xaa=any Xaa=any amino acid
<400> SEQUENCE: 50
<210> SEQ ID NO 51
<211> LENGTH: 29
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(29)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 51
20
<210> SEQ ID NO 52
<211> LENGTH: 29
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(29)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 52
<210> SEQ ID NO 53
<211> LENGTH: 30
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(30)
<223> OTHER INFORMATION: Xaa-any amino acid
<400> SEQUENCE: 53
```

```
<211> LENGTH: 30
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(30)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 54
<210> SEQ ID NO 55
<211> LENGTH: 31
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(31)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 55
10
<210> SEQ ID NO 56
<211> LENGTH: 31
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(31)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 56
10
<210> SEQ ID NO 57
<211> LENGTH: 32
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(32)
<223> OTHER INFORMATION: Kaa=any amino acid
<400> SEQUENCE: 57
25
```

```
<210> SEQ ID NO 58
<211> LENGTH: 32
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(32)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 58
<210> SEQ ID NO 59
<211> LENGTH: 7
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(7)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 59
Gly His Arg Pro Leu Xaa Xaa
<210> SEQ ID NO 60
<211> LENGTH: 7
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(7)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 60
Gly Pro Arg Pro Leu Xaa Xaa
<210> SEQ ID NO 61
<211> LENGTH: 7
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(7)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 61
Gly His Arg Val Leu Xaa Xaa
<210> SEQ ID NO 62
<211> LENGTH: 7
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
```

```
<222> LOCATION: (6)...(7)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 62
Gly Pro Arg Val Leu Xaa Xaa
<210> SEQ ID NO 63
<211> LENGTH: 7
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(7)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 63
Gly His Arg Pro Val Xaa Xaa
<210> SEQ ID NO 64
<211> LENGTH: 7
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(7)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 64
Gly Pro Arg Pro Val Xaa Xaa
<210> SEQ ID NO 65
<211> LENGTH: 7
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(7)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 65
Gly His Arg Val Val Xaa Xaa
<210> SEQ ID NO 66
<211> LENGTH: 7
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(7)
<223> OTHER INFORMATION: Xaa-any amino acid
<400> SEQUENCE: 66
Gly Pro Arg Val Val Xaa Xaa
<210> SEQ ID NO 67
<211> LENGTH: 8
```

```
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(8)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 67
Gly His Arg Pro Leu Xaa Xaa Xaa
<210> SEQ ID NO 68
<211> LENGTH: 8
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(8)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 68
Gly Pro Arg Pro Leu Xaa Xaa Xaa
<210> SEQ ID NO 69
<211> LENGTH: 8
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(8)
<223> OTHER INFORMATION: Xaa-any amino acid
<400> SEQUENCE: 69
Gly His Arg Val Leu Xaa Xaa Xaa
<210> SEQ ID NO 70
<211> LENGTH: 8
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(8)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 70
Gly Pro Arg Val Leu Xaa Xaa Xaa
<210> SEQ ID NO 71
<211> LENGTH: 8
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(8)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 71
```

```
Gly His Arg Pro Val Xaa Xaa Xaa
<210> SEQ ID NO 72
<211> LENGTH: 8
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(8)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 72
Gly Pro Arg Pro Val Xaa Xaa Xaa
<210> SEQ ID NO 73
<211> LENGTH: 8
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(8)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 73
Gly His Arg Val Val Xaa Xaa Xaa
<210> SEQ ID NO 74
<211> LENGTH: 8
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(8)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 74
Gly Pro Arg Val Val Xaa Xaa Xaa
<210> SEQ ID NO 75
<211> LENGTH: 9
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(9)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 75
Gly His Arg Pro Leu Xaa Xaa Xaa
<210> SEQ ID NO 76
<211> LENGTH: 9
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
```

```
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(9)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 76
Gly Pro Arg Pro Leu Xaa Xaa Xaa Xaa
<210> SEQ ID NO 77
<211> LENGTH: 9
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(9)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 77
Gly His Arg Val Leu Xaa Xaa Xaa Xaa
<210> SEQ ID NO 78
<211> LENGTH: 9
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(9)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 78
Gly Pro Arg Val Leu Xaa Xaa Xaa Xaa
<210> SEQ ID NO 79
<211> LENGTH: 9
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(9)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 79
Gly His Arg Pro Val Xaa Xaa Xaa Xaa
<210> SEQ ID NO 80
<211> LENGTH: 9
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(9)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 80
Gly Pro Arg Pro Val Xaa Xaa Xaa Xaa
```

```
<211> LENGTH: 9
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(9)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 81
Gly His Arg Val Val Xaa Xaa Xaa Xaa
<210> SEQ ID NO 82
<211> LENGTH: 9
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(9)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 82
Gly Pro Arg Val Val Xaa Xaa Xaa Xaa
<210> SEQ ID NO 83
<211> LENGTH: 10
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(10)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 83
Gly His Arg Pro Leu Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 84
<211> LENGTH: 10
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(10)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 84
Gly Pro Arg Pro Leu Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 85
<211> LENGTH: 10
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(10)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEOUENCE: 85
```

```
Gly His Arg Val Leu Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 86
<211> LENGTH: 10
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(10)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 86
Gly Pro Arg Val Leu Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 87
<211> LENGTH: 10
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(10)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 87
Gly His Arg Pro Val Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 88
<211> LENGTH: 10
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(10)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEOUENCE: 88
Gly Pro Arg Pro Val Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 89
<211> LENGTH: 10
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(10)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 89
Gly His Arg Val Val Xaa Xaa Xaa Xaa Xaa
                5
<210> SEQ ID NO 90
<211> LENGTH: 10
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
```

```
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(10)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 90
Gly Pro Arg Val Val Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 91
<211> LENGTH: 11
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(11)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 91
Gly His Arg Pro Leu Xaa Xaa Xaa Xaa Xaa Xaa 1 10 \phantom{0}
<210> SEQ ID NO 92
<211> LENGTH: 11
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(11)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 92
Gly Pro Arg Pro Leu Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 93
<211> LENGTH: 11
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(11)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEOUENCE: 93
Gly His Arg Val Leu Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 94
<211> LENGTH: 11
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(11)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 94
Gly Pro Arg Val Leu Xaa Xaa Xaa Xaa Xaa Xaa
```

```
<210> SEQ ID NO 95
<211> LENGTH: 11
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(11)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 95
Gly His Arg Pro Val Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 96
<211> LENGTH: 11
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(11)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 96
Gly Pro Arg Pro Val Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 97
<211> LENGTH: 11
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(11)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 97
Gly His Arg Val Val Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 98
<211> LENGTH: 11
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(11)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 98
Gly Pro Arg Val Val Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 99
<211> LENGTH: 12
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(12)
<223> OTHER INFORMATION: Xaa=any amino acid
```

```
<400> SEQUENCE: 99
Gly His Arg Pro Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 100
<211> LENGTH: 12
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(12)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 100
Gly Pro Arg Pro Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 101
<211> LENGTH: 12
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(12)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 101
Gly His Arg Val Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 102
<211> LENGTH: 12
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(12)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEOUENCE: 102
Gly Pro Arg Val Leu Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 103
<211> LENGTH: 12
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(12)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 103
Gly His Arg Pro Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 104
<211> LENGTH: 12
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
```

```
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(12)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 104
Gly Pro Arg Pro Val Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 105
<211> LENGTH: 12
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(12)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 105
Gly His Arg Val Val Xaa Xaa Xaa Xaa Xaa Xaa
1 5
<210> SEQ ID NO 106
<211> LENGTH: 12
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(12)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 106
Gly Pro Arg Val Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 107
<211> LENGTH: 13
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(13)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 107
Gly His Arg Pro Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 108
<211> LENGTH: 13
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(13)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 108
Gly Pro Arg Pro Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
```

```
-continued
```

```
<210> SEQ ID NO 109
<211> LENGTH: 13
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(13)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 109
Gly His Arg Val Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 110
<211> LENGTH: 13
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(13)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEOUENCE: 110
Gly Pro Arg Val Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 111
<211> LENGTH: 13
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(13)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 111
Gly His Arg Pro Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 112
<211> LENGTH: 13
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(13)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 112
Gly Pro Arg Pro Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 113
<211> LENGTH: 13
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(13)
<223> OTHER INFORMATION: Xaa=any amino acid
```

79

```
<400> SEQUENCE: 113
Gly His Arg Val Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 114
<211> LENGTH: 13
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(13)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 114
Gly Pro Arg Val Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 115
<211> LENGTH: 14
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(14)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 115
Gly His Arg Pro Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 116
<211> LENGTH: 14
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(14)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 116
Gly Pro Arg Pro Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                5
<210> SEQ ID NO 117
<211> LENGTH: 14
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(14)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 117
Gly His Arg Val Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                                    10
<210> SEQ ID NO 118
<211> LENGTH: 14
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
```

```
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(14)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 118
Gly Pro Arg Val Leu Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 119
<211> LENGTH: 14
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(14)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEOUENCE: 119
Gly His Arg Pro Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                                     10
<210> SEQ ID NO 120
<211> LENGTH: 14
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(14)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 120
Gly Pro Arg Pro Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 121
<211> LENGTH: 14
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(14)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 121
Gly His Arg Val Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 122
<211> LENGTH: 14
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(14)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEOUENCE: 122
Gly Pro Arg Val Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
```

```
<210> SEQ ID NO 123
<211> LENGTH: 15
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(15)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 123
<210> SEQ ID NO 124
<211> LENGTH: 15
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(15)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 124
<210> SEQ ID NO 125
<211> LENGTH: 15
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(15)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 125
10
<210> SEQ ID NO 126
<211> LENGTH: 15
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(15)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 126
<210> SEQ ID NO 127
<211> LENGTH: 15
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: Xaa=any amino acid
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(15)
```

87

```
<223> OTHER INFORMATION: peptide of formula II
<400> SEQUENCE: 127
<210> SEQ ID NO 128
<211> LENGTH: 15
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(15)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 128
10
<210> SEQ ID NO 129
<211> LENGTH: 15
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(15)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 129
<210> SEQ ID NO 130
<211> LENGTH: 15
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(15)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEOUENCE: 130
Gly Pro Arg Val Val Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
                              10
<210> SEQ ID NO 131
<211> LENGTH: 16
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(16)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEOUENCE: 131
<210> SEQ ID NO 132
```

<211> LENGTH: 16 <212> TYPE: PRT

```
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(16)
<223> OTHER INFORMATION: Kaa=any amino acid
<400> SEQUENCE: 132
10
<210> SEQ ID NO 133
<211> LENGTH: 16
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(16)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 133
10
<210> SEQ ID NO 134
<211> LENGTH: 16
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(16)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 134
<210> SEQ ID NO 135
<211> LENGTH: 16
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(16)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 135
10
<210> SEQ ID NO 136
<211> LENGTH: 16
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(16)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 136
```

```
1
              5
                              10
                                               15
<210> SEQ ID NO 137
<211> LENGTH: 16
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(16)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 137
10
<210> SEQ ID NO 138
<211> LENGTH: 16
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(16)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 138
10
<210> SEQ ID NO 139
<211> LENGTH: 17
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(17)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 139
5
                              10
Xaa
<210> SEQ ID NO 140
<211> LENGTH: 17
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(17)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 140
5
                              10
Xaa
<210> SEQ ID NO 141
<211> LENGTH: 17
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
```

```
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(17)
<223> OTHER INFORMATION: Xaa-any amino acid
<400> SEQUENCE: 141
5
                     10
Xaa
<210> SEQ ID NO 142
<211> LENGTH: 17
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(17)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 142
10
Xaa
<210> SEQ ID NO 143
<211> LENGTH: 17
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(17)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 143
10
Xaa
<210> SEQ ID NO 144
<211> LENGTH: 17
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(17)
<223> OTHER INFORMATION: Xaa-any amino acid
<400> SEQUENCE: 144
Xaa
<210> SEQ ID NO 145
<211> LENGTH: 17
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
```

```
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(17)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 145
10
Xaa
<210> SEQ ID NO 146
<211> LENGTH: 17
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(17)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 146
10
Xaa
<210> SEQ ID NO 147
<211> LENGTH: 18
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(18)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 147
10
Xaa Xaa
<210> SEQ ID NO 148
<211> LENGTH: 18
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(18)
<223> OTHER INFORMATION: Xaa-any amino acid
<400> SEQUENCE: 148
Хаа Хаа
<210> SEQ ID NO 149
<211> LENGTH: 18
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(18)
<223> OTHER INFORMATION: Xaa=any amino acid
```

```
<400> SEQUENCE: 149
10
Xaa Xaa
<210> SEQ ID NO 150
<211> LENGTH: 18
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(18)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 150
10
Xaa Xaa
<210> SEQ ID NO 151
<211> LENGTH: 18
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(18)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 151
Xaa Xaa
<210> SEQ ID NO 152
<211> LENGTH: 18
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(18)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEOUENCE: 152
1
                                10
Xaa Xaa
<210> SEQ ID NO 153
<211> LENGTH: 18
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(18)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEOUENCE: 153
```

```
10
Xaa Xaa
<210> SEQ ID NO 154
<211> LENGTH: 18
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(18)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 154
Xaa Xaa
<210> SEQ ID NO 155
<211> LENGTH: 19
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(19)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 155
10
Xaa Xaa Xaa
<210> SEQ ID NO 156
<211> LENGTH: 19
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(19)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 156
Xaa Xaa Xaa
<210> SEQ ID NO 157
<211> LENGTH: 19
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(19)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 157
```

```
<210> SEQ ID NO 162
<211> LENGTH: 19
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(19)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 162
10
Xaa Xaa Xaa
<210> SEQ ID NO 163
<211> LENGTH: 20
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(20)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 163
10
Xaa Xaa Xaa Xaa
<210> SEQ ID NO 164
<211> LENGTH: 20
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(20)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 164
Xaa Xaa Xaa Xaa
<210> SEQ ID NO 165
<211> LENGTH: 20
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(20)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 165
10
Xaa Xaa Xaa Xaa
```

```
<210> SEQ ID NO 166
<211> LENGTH: 20
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(20)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 166
10
Xaa Xaa Xaa Xaa
          20
<210> SEQ ID NO 167
<211> LENGTH: 20
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(20)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 167
10
Xaa Xaa Xaa Xaa
<210> SEQ ID NO 168
<211> LENGTH: 20
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(20)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 168
Xaa Xaa Xaa Xaa
<210> SEQ ID NO 169
<211> LENGTH: 20
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(20)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 169
Xaa Xaa Xaa Xaa
```

```
<210> SEQ ID NO 170
<211> LENGTH: 20
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(20)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 170
5
                              10
Xaa Xaa Xaa Xaa
<210> SEQ ID NO 171
<211> LENGTH: 21
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(21)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 171
Xaa Xaa Xaa Xaa Xaa
          20
<210> SEQ ID NO 172
<211> LENGTH: 21
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(21)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 172
Xaa Xaa Xaa Xaa
<210> SEQ ID NO 173
<211> LENGTH: 21
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(21)
<223> OTHER INFORMATION: Xaa-any amino acid
<400> SEQUENCE: 173
```

Xaa Xaa Xaa Xaa Xaa 20

```
<210> SEQ ID NO 174
<211> LENGTH: 21
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(21)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 174
10
Xaa Xaa Xaa Xaa Xaa
         20
<210> SEQ ID NO 175
<211> LENGTH: 21
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(21)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 175
10
Xaa Xaa Xaa Xaa
<210> SEQ ID NO 176
<211> LENGTH: 21
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(21)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 176
Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 177
<211> LENGTH: 21
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(21)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 177
10
```

Xaa Xaa Xaa Xaa

```
<210> SEQ ID NO 178
<211> LENGTH: 21
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(21)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 178
Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 179
<211> LENGTH: 22
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(22)
<223> OTHER INFORMATION: Kaa=any amino acid
<400> SEQUENCE: 179
Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 180
<211> LENGTH: 22
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(22)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEOUENCE: 180
1
            5
                              10
Xaa Xaa Xaa Xaa Xaa
         20
<210> SEQ ID NO 181
<211> LENGTH: 22
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(22)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 181
```

10

```
Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 182
<211> LENGTH: 22
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(22)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 182
10
Xaa Xaa Xaa Xaa Xaa
         20
<210> SEQ ID NO 183
<211> LENGTH: 22
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(22)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 183
Xaa Xaa Xaa Xaa Xaa
         20
<210> SEQ ID NO 184
<211> LENGTH: 22
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(22)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 184
Xaa Xaa Xaa Xaa Xaa
         20
<210> SEQ ID NO 185
<211> LENGTH: 22
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(22)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 185
5
                            10
```

```
Xaa Xaa Xaa Xaa Xaa
         20
<210> SEQ ID NO 186
<211> LENGTH: 22
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(22)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 186
10
Xaa Xaa Xaa Xaa Xaa
         20
<210> SEQ ID NO 187
<211> LENGTH: 23
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(23)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 187
10
Xaa Xaa Xaa Xaa Xaa Xaa
          20
<210> SEQ ID NO 188
<211> LENGTH: 23
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(23)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 188
Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 189
<211> LENGTH: 23
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(23)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 189
```

```
10
Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 190
<211> LENGTH: 23
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(23)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 190
10
Xaa Xaa Xaa Xaa Xaa Xaa
          20
<210> SEQ ID NO 191
<211> LENGTH: 23
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(23)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 191
10
Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 192
<211> LENGTH: 23
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(23)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 192
5
                                10
Xaa Xaa Xaa Xaa Xaa Xaa
          20
<210> SEQ ID NO 193
<211> LENGTH: 23
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(23)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 193
```

```
1.0
Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 194
<211> LENGTH: 23
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(23)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 194
Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 195
<211> LENGTH: 24
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(24)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 195
Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 196
<211> LENGTH: 24
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(24)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 196
10
Xaa Xaa Xaa Xaa Xaa Xaa Xaa
          20
<210> SEQ ID NO 197
<211> LENGTH: 24
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(24)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 197
```

```
Xaa Xaa Xaa Xaa Xaa Xaa Xaa
         20
<210> SEQ ID NO 198
<211> LENGTH: 24
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(24)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 198
10
Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 199
<211> LENGTH: 24
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(24)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 199
Xaa Xaa Xaa Xaa Xaa Xaa Xaa
         20
<210> SEQ ID NO 200
<211> LENGTH: 24
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(24)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 200
Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 201
<211> LENGTH: 24
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(24)
<223> OTHER INFORMATION: Xaa=any amino acid
```

```
<400> SEQUENCE: 201
Xaa Xaa Xaa Xaa Xaa Xaa Xaa
         20
<210> SEQ ID NO 202
<211> LENGTH: 24
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(24)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 202
Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 203
<211> LENGTH: 25
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(25)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 203
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 204
<211> LENGTH: 25
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(25)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 204
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 205
<211> LENGTH: 25
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(25)
<223> OTHER INFORMATION: Xaa=any amino acid
```

```
<400> SEQUENCE: 205
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
         20
<210> SEQ ID NO 206
<211> LENGTH: 25
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(25)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 206
10
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
        20
<210> SEQ ID NO 207
<211> LENGTH: 25
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(25)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 207
10
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
         20
<210> SEQ ID NO 208
<211> LENGTH: 25
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(25)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 208
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 209
<211> LENGTH: 25
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(25)
```

```
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 209
10
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 210
<211> LENGTH: 25
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(25)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 210
10
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
         20
<210> SEQ ID NO 211
<211> LENGTH: 26
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(26) <223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 211
10
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 212
<211> LENGTH: 26
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(26)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 212
10
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 213
<211> LENGTH: 26
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
```

```
<222> LOCATION: (6)...(26)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 213
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 214
<211> LENGTH: 26
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(26)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 214
10
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 215
<211> LENGTH: 26
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(26)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 215
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
          20
<210> SEQ ID NO 216
<211> LENGTH: 26
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(26)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEOUENCE: 216

        Xaa
        Xaa
        Xaa
        Xaa
        Xaa
        Xaa
        Xaa
        Xaa
        Xaa
        25

<210> SEQ ID NO 217
<211> LENGTH: 26
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
```

```
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(26)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 217
10
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
<210> SEQ ID NO 218
<211> LENGTH: 26
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(26)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 218
10
Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
         20
<210> SEQ ID NO 219
<211> LENGTH: 27
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(27)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 219
<210> SEQ ID NO 220
<211> LENGTH: 27
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(27)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 220
<210> SEQ ID NO 221
<211> LENGTH: 27
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
```

## -continued

```
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(27)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 221
10
20
<210> SEQ ID NO 222
<211> LENGTH: 27
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(27)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 222
20
<210> SEQ ID NO 223
<211> LENGTH: 27
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(27)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 223
20
<210> SEQ ID NO 224
<211> LENGTH: 27
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(27)
<223> OTHER INFORMATION: Kaa=any amino acid
<400> SEQUENCE: 224
10
<210> SEQ ID NO 225
<211> LENGTH: 27
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
```

133

```
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(27)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 225
<210> SEQ ID NO 226
<211> LENGTH: 27
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(27)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 226
20
<210> SEQ ID NO 227
<211> LENGTH: 28
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(28)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 227
<210> SEQ ID NO 228
<211> LENGTH: 28
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(28)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 228
10
20
<210> SEQ ID NO 229
<211> LENGTH: 28
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
```

```
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(28)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 229
<210> SEQ ID NO 230
<211> LENGTH: 28
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(28)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 230
10
<210> SEQ ID NO 231
<211> LENGTH: 28
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(28)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 231
<210> SEQ ID NO 232
<211> LENGTH: 28
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(28)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 232
<210> SEQ ID NO 233
<211> LENGTH: 28
<212> TYPE: PRT
```

## -continued

```
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(28)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 233
<210> SEQ ID NO 234
<211> LENGTH: 28
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(28)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 234
<210> SEQ ID NO 235
<211> LENGTH: 29
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(29)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 235
10
<210> SEQ ID NO 236
<211> LENGTH: 29
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(29)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 236
<210> SEQ ID NO 237
```

<210> SEQ ID NO 237 <211> LENGTH: 29

```
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(29)
<223> OTHER INFORMATION: Xaa-any amino acid
<400> SEQUENCE: 237
20
                      25
<210> SEQ ID NO 238
<211> LENGTH: 29
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(29)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 238
10
<210> SEQ ID NO 239
<211> LENGTH: 29
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(29)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 239
<210> SEQ ID NO 240
<211> LENGTH: 29
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(29)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 240
10
```

```
<211> LENGTH: 29
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(29)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 241
<210> SEQ ID NO 242
<211> LENGTH: 29
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(29)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 242
<210> SEQ ID NO 243
<211> LENGTH: 30
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(30)
<223> OTHER INFORMATION: Kaa=any amino acid
<400> SEQUENCE: 243
10
25
        20
<210> SEQ ID NO 244
<211> LENGTH: 30
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(30)
<223> OTHER INFORMATION: Kaa=any amino acid
<400> SEQUENCE: 244
10
25
```

```
<210> SEQ ID NO 245
<211> LENGTH: 30
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(30)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 245
10
<210> SEQ ID NO 246
<211> LENGTH: 30
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(30)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 246
10
<210> SEQ ID NO 247
<211> LENGTH: 30
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(30)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 247
20
                      25
<210> SEQ ID NO 248
<211> LENGTH: 30
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(30)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 248
```

```
<210> SEQ ID NO 249
<211> LENGTH: 30
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(30)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 249
<210> SEQ ID NO 250
<211> LENGTH: 30
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(30)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 250
25
<210> SEQ ID NO 251
<211> LENGTH: 31
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(31)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 251
<210> SEQ ID NO 252
<211> LENGTH: 31
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(31)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 252
20
                       25
```

```
<210> SEQ ID NO 253
<211> LENGTH: 31
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(31)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 253
<210> SEQ ID NO 254
<211> LENGTH: 31
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II Xaa=any amino acid
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(31)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 254
<210> SEQ ID NO 255
<211> LENGTH: 31
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(31)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 255
<210> SEQ ID NO 256
<211> LENGTH: 31
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(31)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 256
```

```
20
                       25
                                      30
<210> SEQ ID NO 257
<211> LENGTH: 31
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(31)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 257
<210> SEQ ID NO 258
<211> LENGTH: 31
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(31)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 258
<210> SEQ ID NO 259
<211> LENGTH: 32
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(32)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 259
<210> SEQ ID NO 260
<211> LENGTH: 32
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(32)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 260
```

```
<210> SEQ ID NO 261
<211> LENGTH: 32
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(32)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 261
25
<210> SEQ ID NO 262
<211> LENGTH: 32
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(32)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 262
10
20
                      25
<210> SEQ ID NO 263
<211> LENGTH: 32
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(32)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 263
10
25
<210> SEQ ID NO 264
<211> LENGTH: 32
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(32)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 264
```

```
25
<210> SEQ ID NO 265
<211> LENGTH: 32
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(32)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 265
10
20
                      25
<210> SEQ ID NO 266
<211> LENGTH: 32
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(32)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 266
25
<210> SEQ ID NO 267
<211> LENGTH: 33
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(33)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 267
20
                       25
Xaa
<210> SEQ ID NO 268
<211> LENGTH: 33
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(33)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 268
```

```
10
Xaa
<210> SEQ ID NO 269
<211> LENGTH: 33
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(33)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 269
Xaa
<210> SEQ ID NO 270
<211> LENGTH: 33
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(33)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 270
25
Xaa
<210> SEQ ID NO 271
<211> LENGTH: 33
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(33)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 271
Xaa
<210> SEQ ID NO 272
<211> LENGTH: 33
<212> TYPE: PRT
```

```
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(33)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 272
Xaa
<210> SEO ID NO 273
<211> LENGTH: 33
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(33)
<223> OTHER INFORMATION: Xaa-any amino acid
<400> SEQUENCE: 273
10
Xaa
<210> SEQ ID NO 274
<211> LENGTH: 33
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(33)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 274
20
                      25
Xaa
<210> SEQ ID NO 275
<211> LENGTH: 34
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(34)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 275
```

```
25
Xaa Xaa
<210> SEQ ID NO 276
<211> LENGTH: 34
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(34)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 276
20
                      25
Xaa Xaa
<210> SEQ ID NO 277
<211> LENGTH: 34
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(34)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 277
25
Xaa Xaa
<210> SEQ ID NO 278
<211> LENGTH: 34
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(34)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 278
Xaa Xaa
<210> SEQ ID NO 279
<211> LENGTH: 34
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
```

```
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(34)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 279
Xaa Xaa
<210> SEQ ID NO 280
<211> LENGTH: 34
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(34)
<223> OTHER INFORMATION: Kaa=any amino acid
<400> SEOUENCE: 280
Xaa Xaa
<210> SEQ ID NO 281
<211> LENGTH: 34
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(34)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 281
Xaa Xaa
<210> SEQ ID NO 282
<211> LENGTH: 34
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(34)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 282
10
20
                     25
```

Xaa Xaa

and the second s

```
<210> SEQ ID NO 283
<211> LENGTH: 35
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(35)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 283
10
Xaa Xaa Xaa
<210> SEQ ID NO 284
<211> LENGTH: 35
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(35)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 284
20
                        25
Xaa Xaa Xaa
     35
<210> SEQ ID NO 285
<211> LENGTH: 35
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(35)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 285
Xaa Xaa Xaa
     35
<210> SEQ ID NO 286
<211> LENGTH: 35
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
```

```
<222> LOCATION: (6)...(35)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 286
Xaa Xaa Xaa
<210> SEQ ID NO 287
<211> LENGTH: 35
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(35)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 287
Xaa Xaa Xaa
<210> SEQ ID NO 288
<211> LENGTH: 35
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(35)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 288
Xaa Xaa Xaa
<210> SEQ ID NO 289
<211> LENGTH: 35
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (6)...(35)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 289
20
```

```
Xaa Xaa Xaa
<210> SEQ ID NO 290
<211> LENGTH: 35
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<220> FEATURE:
 <221> NAME/KEY: VARIANT
 <222> LOCATION: (6)...(35)
<223> OTHER INFORMATION: Kaa-any amino acid
<400> SEQUENCE: 290
10
Xaa Xaa Xaa
<210> SEQ ID NO 291
<211> LENGTH: 23
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<400> SEQUENCE: 291
Asp Lys Lys Arg Glu Glu Ala Pro Ser Leu Arg Pro Ala Pro Pro Pro
Ile Ser Gly Gly Gly Tyr Arg
<210> SEQ ID NO 292
<211> LENGTH: 23
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula II
<400> SEQUENCE: 292
Glu Arg His Gln Ser Ala Cys Lys Asp Ser Asp Trp Pro Phe Cys Ser 1 \phantom{\bigg|} 5 \phantom{\bigg|} 10 \phantom{\bigg|} 15
Asp Glu Asp Trp Asn Tyr Lys
<210> SEQ ID NO 293
<211> LENGTH: 28
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide Aalpha
<400> SEQUENCE: 293
Gly Pro Arg Val Val Glu Arg His Gln Ser Ala Cys Lys Asp Ser Asp 1 \phantom{-} 10 \phantom{-} 15
Trp Pro Phe Cys Ser Asp Glu Asp Trp Asn Tyr Lys 20 25
<210> SEQ ID NO 294
<211> LENGTH: 28
<212> TYPE: PRT
```

### -continued

```
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide Bbeta
<400> SEQUENCE: 294
Gly His Arg Pro Leu Asp Lys Lys Arg Glu Glu Ala Pro Ser Leu Arg 1 5 10 15
Pro Ala Pro Pro Pro Ile Ser Gly Gly Tyr Arg
<210> SEQ ID NO 295
<211> LENGTH: 19
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(19)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 295
Xaa Xaa Xaa
<210> SEQ ID NO 296
<211> LENGTH: 19
<212> TYPE: PRT
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: peptide of formula I
<220> FEATURE:
<221> NAME/KEY: VARIANT
<222> LOCATION: (4)...(19)
<223> OTHER INFORMATION: Xaa=any amino acid
<400> SEQUENCE: 296
10
Xaa Xaa Xaa
```

The invention claimed is:

1. A method of treating inflammation in a subject comprising administering to the subject a peptide

(SEQ ID NO:294)

65

Gly His Arg Pro Leu Asp Lys Lys Arg Glu Glu

Ala Pro Ser Leu Arg Pro Ala Pro Pro Pro Ile

Ser Gly Gly Tyr Arg

or a salt or amide thereof, in an amount effective to treat inflammation, wherein the amino terminus is

- wherein R1 and R2 are each selected from the group consisting of hydrogen and a saturated or unsaturated hydrocarbon residue, said residue having from 1 to 10 carbon atoms.
- 2. A method of inhibiting inflammation in a subject comprising administering to the subject a peptide

Gly His Arg Pro Leu Asp Lys Lys Arg Glu Glu

Ala Pro Ser Leu Arg Pro Ala Pro Pro Pro Ile

Ser Gly Gly Gly Tyr Arg

or a salt or amide thereof, in an amount effective to inhibit inflammation, wherein the amino terminus is





herein R1 and R2 are either the same or different, and

wherein R1 and R2 are either the same or different.

173

wherein R1 and R2 are each selected from the group consisting of hydrogen and a saturated or unsaturated hydrocarbon residue, said residue having from 1 to 10 carbon atoms.

- 3. The method of claim 1 or 2, wherein the inflammation <sup>5</sup> is due to a condition selected from the group consisting of an infection, an autoimmune condition, a rheumatic disorder, or a disorder of the immune system.
- 4. A method of treating rejection of a transplanted tissue in a subject comprising administering to the subject a <sup>10</sup> peptide

(SEQ ID NO:294)
Gly His Arg Pro Leu Asp Lys Lys Arg Glu Glu
Ala Pro Ser Leu Arg Pro Ala Pro Pro Pro Ile
Ser Gly Gly Gly Tyr Arg

174

or a salt or amide thereof, in an amount effective to treat rejection of transplanted tissue, wherein the amino terminus is



wherein R1 and R2 are either the same or different,

wherein R1 and R2 are each selected from the group consisting of hydrogen and a saturated or unsaturated hydrocarbon residue, said residue having from 1 to 10 carbon atoms.

\* \* \* \* \*